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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,309	06/27/2001	Peter D'Antonio	D'ANTONIO-15	1645
7590	04/28/2004		EXAMINER	
H. JAY SPIEGEL P.O. BOX 444 Mount Vernon, VA 22121			MC CLOUD, RENATA D	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/891,309	D'ANTONIO ET AL.	
	Examiner	Art Unit	
	Renata McCloud	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 March 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8, 13-15 and 19 is/are rejected.
- 7) Claim(s) 9-12, 17 and 18 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment filed 03 March 2004, the following has occurred:
 - (a) Claims 1, 5, 7, 8, 13, and 14 have been amended.
 - (b) Claim 16 has been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims are 1-5, 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Antonio et al (U.S. 5,193,318) in view of D'Antonio et al (US 4,821,839).

Claim 1: D'Antonio '318 teach a sound diffuser with low frequency sound absorption (e.g. Fig. 1) having a front surface configured to diffuse sound waves (e.g. Fig. 2:21), a rear surface (Fig. 2: 23), and means for receiving sound waves via the front surface below a desired cut-off frequency (e.g. Fig. 2:32). D'Antonio '318 do not teach means permitting sound waves to travel from the front surface to the rear surface

through the body. D'Antonio '839 teaches means permitting sound waves to travel from a front surface to a rear surface (Fig. 2:21) through the body (Col. 2: 10-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by D'Antonio '319 to include means permitting sound waves to travel from a front surface to a rear surface through the body as taught by D'Antonio '839. The advantage of this would be the ability to absorb sound waves.

Claim 2: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 2, D'Antonio '318 teach a plurality of divided or non-divided parallel wells (e.g. Fig. 1: wells 27 and 29 divided by dividers 23 and 25).

Claim 3: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 3, D'Antonio '318 teach the front surface having a geometrical or irregular shaped pattern (e.g. Fig. 1:surface has a geometrical shape).

Claim 4: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 3.

Referring to claim 4, D'Antonio '318 teach the shapes separated by slots or holes (e.g. Fig. 2:32 is a hole that separates shapes adjacent to it).

Claim 5: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 4.

Referring to claim 5, D'Antonio '318 teach receiving means between the slots or holes (e.g. Fig. 2:32 is a hole for sound to pass through).

Claim 7: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 7, D'Antonio '318 teach the receiving means having a plurality of open slots (e.g. Fig. 2:30).

Claims 15: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 7.

Referring to claim 15, D'Antonio '318 teach the slots providing low frequency absorption (e.g. Col. 3:14-17).

3. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Antonio et al (U.S. 5,193,318) and D'Antonio et al (US 4,821,839) as applied to claim 1 above, in view of McGrath (U.S. Patent 6,015,026).

Claims 6: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 6, they do not teach the front surface comprised of a compound curved shaped. McGrath teaches a front surface comprised of a compound curved shaped (e.g. Figure 1, Item 12).

Claim 19: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 19, they do not teach a crossover frequency below which sound is absorbed and above which diffusion takes place. McGrath teaches a crossover frequency below which sound is absorbed and above which diffusion takes place (e.g. Figure 24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by D'Antonio '318 and D'Antonio '839 to include the teachings of McGrath. The advantage of this would be a cost efficient, easy to install acoustic diffuser that absorbs a wide range of low frequencies, and is reflective over a range of mid-range frequencies.

4. Claims 8, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Antonio et al (U.S. 5,193,318) and D'Antonio et al (US 4,821,839) as applied to claim 1 above, in view of Fries (U.S. Patent 5,422,446).

Claim 8: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 8, they do not teach the receiving means having a plurality of holes. Fries teaches receiving means having a plurality of holes (e.g. Figure 1, Item 9).

Claim13: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 13, they do not teach an absorptive material over the rear of the body. Fries teaches an absorptive material over the rear of the body (e.g. Figure 2, Item 7).

Claim 14: D'Antonio '318 and D'Antonio '839 teach the limitations of claim 1.

Referring to claim 14, they do not teach the absorptive material made of a porous material. Fries teaches an absorptive material made of a porous material (e.g. Column 3, Line 66).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by D'Antonio '318 and D'Antonio '839 to include the teachings of Fries. The advantage of this would be an acoustic diffuser that guides sound through its holes and has control over sound waves passing through.

Allowable Subject Matter

5. Claims 9-12, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art made of record fails to teach a diffuser with a first set of large holes and a second set of small holes and with slots having a width of 0.1 to 1 mm.

Response to Arguments

6. Applicant's arguments with respect to claims 1-15 and 17-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDM

Renata McCloud
Examiner
Art Unit 2837

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